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ABSTRACT

This document provides guidelines for communities interested in developing public cholesterol education and screening programs. It contains information to use in considering a program and protocols to follow in conducting a program that meets standards established by the National Cholesterol Education Program. An introduction summarizes content. Section 2 covers five topic areas of concern: (1) the goal and objectives of public cholesterol education and screening; (2) general recommendations for program development; (3) questions to ask before becoming involved with public cholesterol education and screening, including liability, staff, medical community links, screening site, quality control, and portable analyzers; (4) portable analyzer comparison; and (5) statement on cholesterol screening of children. Section 3 details the steps involved in performing the actual procedure on the day of screening and education. Three stations at the screening site are described: registration, measurement, and education and referral. Concerns, materials, setup, and procedure are detailed for each station. Quality control procedures are outlined. Photo-ready copies of forms and additional education materials include informed consent, education message, medical care referral information, follow-up reminder letter, basic definitions, commonly asked questions, and annotated bibliography of 48 recommended materials and resources. The final section lists eight suggestions for program evaluation.

(YLB)

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**RECOMMENDATIONS FOR
PUBLIC CHOLESTEROL EDUCATION AND
SCREENING PROGRAMS**

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**DRAFT: January 1991
Division of Health Promotion and
Education
Minnesota Department of Health**

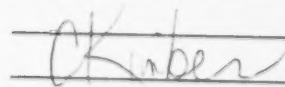
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RECOMMENDATIONS FOR PUBLIC CHOLESTEROL EDUCATION AND SCREENING PROGRAMS

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INTRODUCTION

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Since the initiation of the National Cholesterol Education Program (NCEP) and the development of simpler, more rapid laboratory measurements of blood cholesterol levels, screening for blood cholesterol levels has become more widespread. Public screening has the possibility of detecting large numbers of individuals with high blood cholesterol levels in addition to those detected in the physician's office. Unfortunately, the reliability of cholesterol measurements and the education, referral and follow-up in public screening programs is often inadequate.

The Division of Health Promotion and Education, Minnesota Department of Health, began a cholesterol project funded by a grant from the Centers for Disease Control, Atlanta. The overall goal of the cholesterol project was to summarize state-of-the-art information about cholesterol and make recommendations for optimal education materials and approaches to be applied in conducting public cholesterol education and screening programs in Minnesota.

Staff convened scientific and technical experts and representatives from key organizations involved in cholesterol education and screening activities to identify and discuss problems in providing quality public cholesterol education and screening programs. Two groups of experts were assembled to assist in development of the cholesterol project activities. One group, the Education Message Review Team, focused on development of a standard cholesterol education message. The Physician Advisory Panel was the other group. It consisted of a panel of physicians involved in national and state-wide cholesterol research, education programs, and policy-making organizations. This group guided development of the general recommendations.

The product of these activities -- **Recommendations for Public Cholesterol Education and Screening Programs** -- provides guidelines for communities interested in developing public cholesterol education and screening programs. It contains "how to" information to use in considering a public cholesterol education and screening program, and protocols to follow in conducting a public cholesterol education and screening program that meets standards established by the NCEP. The objections raised in the report from the Office of the Inspector General on Public Cholesterol Screening released November 1989 and the September 1989 Atlantic Monthly article by Thomas Moore have all been addressed. Standard forms to be used at public screenings are included. Use of these forms will assist screening organizations in meeting NCEP guidelines. The forms provide that a participant is given informed consent, information about their cholesterol measurement, medical care referral, and a follow-up reminder. Additional education materials are also provided. Suggestions for evaluation of a cholesterol education and screening program complete the recommendations.

PUBLIC CHOLESTEROL EDUCATION AND SCREENING PROGRAM CONCERNS

Scientific evidence has lead to general agreement on the importance of lowering blood cholesterol to reduce coronary heart disease mortality. The National Cholesterol Education Program (NCEP) has developed guidelines for the detection, evaluation and treatment of high blood cholesterol in adults. These recommendations take the NCEP guidelines one step further in providing community-based information on how to proceed in planning for a cholesterol education and screening program.

There are several important considerations to be made before starting a public cholesterol education and screening program. This section covers five topic areas of concern:

- A. The goal of and objectives for public cholesterol education and screening
- B. General recommendations for providing quality public cholesterol education and screening
- C. Questions to ask before becoming involved with public cholesterol education and screening
- D. Portable analyzer comparison
- E. Statement on cholesterol screening of children

All of these topic areas should be thoroughly reviewed before initiating a cholesterol education and screening program.

The Goal of and Objectives for Public Cholesterol Education and Screening

The universal goal of a cholesterol education and screening program is to reduce the morbidity and mortality from coronary heart disease (CHD) through detection and treatment of individuals with elevated blood cholesterol levels.

There are four primary objectives to be achieved in a public cholesterol education and screening program.

1. To detect individuals at risk for high blood cholesterol and to refer them to appropriate medical care where they may be treated.
2. To raise public awareness and knowledge of CHD and the benefits of reducing high blood cholesterol levels.
3. To teach individuals about adopting healthy habits like eating a variety of foods low in fat, being physically active and not smoking in order to attain and maintain desirable blood cholesterol levels.
4. To reach individuals who might not otherwise have their blood cholesterol measured as part of routine health care. The focus of this last objective is to target hard-to-reach or underserved segments of the population, including worksite locations.

General Recommendations for Providing Quality Public Cholesterol Education and Screening

These general recommendations were developed based on panel reports from the National Cholesterol Education Program (NCEP). Concerns that were raised by the November 1989 Inspector General's Report to Congress, the September 1989 Atlantic Monthly article by Thomas Moore, and discussions with the Minnesota Cholesterol Project's Physician Advisory Panel have also been addressed. In order to provide consumers and the health care community with sufficient confidence in public cholesterol education and screening, these general recommendations should be met. In the absence of legislation governing public cholesterol education and screening, these general recommendations will insure that quality public cholesterol education and screening programs--accurate and reliable--may be offered.

1. Screen adult (age 20 years and older) segments of the population only. Special efforts should be made to screen hard-to-reach population groups such as men, younger adults, low income or low education groups.
2. Provide precise and accurate cholesterol measurements. Laboratory instruments used to measure cholesterol should undergo pre-field evaluation and should be subject to a continuous program of quality control.
3. Maintain a well-trained, carefully supervised staff who have received training and practice sessions specific to their responsibilities, and who have access to consultation from appropriate experts.
4. Provide assessment, risk factor and nutrition counseling, and referral to health care for follow-up. Include education as part of the screening to provide reliable verbal and printed information concerning cholesterol levels, dietary guidelines and related risk factors. (Giving a participant a cholesterol number alone is not sufficient.)
5. Maintain an environment conducive to effective cholesterol screening. Screening sites should be convenient and accommodate the expected numbers of participants. There should be adequate space to assure privacy in measuring and counseling participants about their blood cholesterol. The health care community should be aware of the cholesterol screening and provide recommended medical follow-up care. Provide cholesterol education and screening at a reasonable cost to the participants.

6. Provide cholesterol screening for measurement of total cholesterol only. Refer participants to their regular source of medical care for analysis of other lipid fractions such as HDL-cholesterol.
7. Refer participants to their regular source of medical care for rescreening (based on NCEP guidelines). Tell participants that the screening results are not a diagnosis. Remind referred participants to seek medical care through follow-up methods such as reminder letters and/or phone calls.
8. Evaluate the effectiveness of the screening program periodically.

Questions to Address Before Becoming Involved With Public Cholesterol Education and Screening

Based on the goal, objectives, and general recommendations stated previously, these questions should be explored before beginning a public cholesterol education and screening program.

1. Liability

Do you have an informed consent form?

- Each participant must sign an informed consent form. You may choose to use the sample form included with these recommendations. If you choose to design your own, it should be reviewed by your legal advisor.

Will your organization be able to follow proper sanitation procedures?

- Infection control procedures must be followed to insure safety to the participant and staff. Check STATION 2: Measurement of these recommendations to see if your organization will be able to follow sanitation procedures.

2. Staff

Do you have sufficient staff with appropriate training to provide an education and screening program?

- The number of staff needed depends on the number of participants you plan to screen. Considerations include the maximum through-put of the analyzer and whether participants will come all at once or have scheduled appointments. In most cases, you should have at least four staff at each screening: one at each of the three stations plus one supervisor.

Are the staff who will be drawing blood at the screening trained in blood drawing technique?

- Fingerstick technique is a unique blood drawing technique and requires special training. Your analyzer sales representative should provide this initial training however staff who join your program later will require training.

Are the staff trained to handle emergency situations?

- Some participants may experience faintness when their blood is drawn. Staff should be aware of this and prepared to handle such situations.

Are the staff who will be providing the education able to counsel participants on blood cholesterol measurements, heart disease risk factors, and dietary guidelines?

- Participants need more information on managing their blood cholesterol than to be just given their measurement. Staff must be able to provide participants with information on what their cholesterol measurement means, what the other risks for heart disease are, and what dietary guidelines are recommended to control blood cholesterol.

3. Medical Community Links

Has the local medical community been informed that a cholesterol screening will be taking place?

- Even if area physicians are unwilling to accept referrals from your cholesterol screening, some of their current patients may attend your screening. It may be beneficial for your program to inform the area health care providers of your activities. This will depend on the concentration of physicians in your area and where your participants generally go for health care services (large city/metropolitan area, small town, rural).

Are area physicians willing to accept and treat referred participants, and at what cholesterol levels?

- Area physicians should be surveyed to determine their readiness to accept referrals. You should inform them of your technique, ascertain their confidence in your measurements and determine their cholesterol level cut-points for action (NCEP guidelines or other). Depending on your community, you should develop a referral list of physicians willing to accept referrals or identify a general information phone number (area Medical Society) that participants may call. This information should be provided to participants who do not currently have a health care provider.

Will area health care providers be interested in providing additional services to complement the screening?

- You may want to develop a list of area resources for cholesterol education and screening programs, i.e. group classes, individual counseling, other screening services. Include dietitians, nurses, pharmacists, hospitals, clinics, and community education.

Will referrals be followed-up to assure that participants are seeking medical care?

- Participants with measurements that require referrals should be reminded to seek medical care. These reminders may be letters and/or phone calls.

4. Screening Site

Will the site you are considering for your screening location be suitable for your screening and education needs?

- The screening site you choose should:
 - provide privacy for the participant
 - be accessible to all individuals
 - be centrally located
 - allow a traffic flow pattern to accommodate the expected number of participants
 - allow for promotion of the screening and education program
 - have handwashing facilities.

5. Quality Control

Will your screening organization be dedicated to a quality control program?

- Persons screened for blood cholesterol have a right to expect an accurate and reliable measurement. Accuracy is important because information is being given on which individuals expect to act. Laboratory, internal field (regular analysis of known standards) and external field (comparative analysis of blinded samples with a reference lab) quality control procedures enable NCEP laboratory standards to be met.
- A contract with an area reference laboratory should be established. (See Public Screening Protocols, Quality Control section.)

6. Portable Analyzers

Has the manufacturer fulfilled FDA pre-marketing notification requirements?

- As new analyzers appear on the market, the manufacturer's representative should be able to tell you if these requirements have been met.

Can the manufacturer provide two different levels of control serum pools at or near the 200 and 240 mg/dl decision-making values?

- It is necessary to have control serum pools close to both of these values to perform quality control checks.

Is the analyzer capable of accurate and reliable measurements, and if so, can accurate and reliable measurements be expected under screening conditions?

- Analyzers used in screening need to be able to withstand travel and still produce accurate and reliable measurements.

Can the accuracy of the system be checked on a daily basis?

- It is important to have the ability to detect inaccuracies in the measurements so that the problem can be corrected or the analyzer can be replaced.

What are the storage and handling requirements of reagents and materials?

- Proper storage and handling of reagents is necessary to insure accurate and reliable measurements. Special storage needs may require purchase of additional equipment or materials. Special handling needs may require additional time in set-up on the day of the screening.

What service does the manufacturer provide for maintenance, replacement of malfunctioning equipment, updating, training and ordering of supplies?

- All of these points must be considered before purchase of an analyzer based on your particular needs for screening.

7. Other

Will participants be able to afford the cholesterol screening fee?

- Screening fees should be set at a level that will be affordable to those being screened. If not, the number of participants may be reduced.

Will participants be suspicious that blood testing might include a screen for drug use, especially at a worksite screening?

- The screening staff should be prepared to answer questions on the actual screening procedure and capabilities of the test.

A comparison of three portable analyzers is provided on the following page. It provides information to use in making comparisons and purchasing decisions. The list is an updated version of an American Heart Association comparison list prepared in 1988. You may want to check with analyzer sales representatives for current prices, functions and operation procedures.

Portable Analyzer Comparison

<u>Features</u>	<u>REFLOTRON</u>	<u>VISION</u>	<u>DT-60</u>
<u>Cost</u>			
Instrument cost	\$4,995	\$18,500	\$5,200
Reagent cost/test	strip: \$1.20-1.37	cartridge: \$1.95-2.10	slide: \$1.55
Need for other equipment	cooler for control serum storage in field	cooler for reagent storage in field	centrifuge cooler and dry ice for reagent storage in field
Time in machine/sample	3 min.	10 min.	5 min.
Maximum throughput	20 test/hour	60 tests/hour	65 tests/hour
Sample loading/run	individual	up to 10	up to 6
Warm up time	3 min. (variable)	none	25 min.
Reagent storage	room temp	4 degrees C	-20 degrees C
Maximum stability of reagents	4 months	3 months	12 months
Handling of controls	requires mixing	ready to use	requires mixing
Handling of sample	1. Draw into pipette 2. Pipette onto slide	1. Draw into capillary 2. Insert into cartridge	1. Draw into capillary 2. Centrifuge 3. Pipette serum 4. Place serum on slide
Calibration	none	if controls out of limits	3 months or when moved, or new slide lot
Handling of calibrators	none	ready to use	requires mixing
Range of cholesterol assay (mg/dl)	100-500	5-500	50-425
Print out	no (display only); may purchase separate printer	yes	yes (display also)
<u>Portability</u>			
Size (H x W x D)	8" x 12" x 14"	19" x 43" x 22"	7" x 9" x 14"
Weight (lbs)	12	85	25

NOTE: Contact the analyzer sales representative for the most current information on costs, lease options, service agreements, maintenance, temperature and calibration sensitivity of the analyzer, problem solving availability, loaner availability, and quality control program.

Statement on Cholesterol Screening of Children

Public cholesterol screening for children (19 years of age and younger) is not recommended. There are currently no standards for childhood cholesterol measurement to categorize level of risk. The National Cholesterol Education Program has convened a panel for making recommendations on childhood cholesterol measurements. The Expert Panel on Blood Cholesterol Levels in Children and Adolescents is expected to have a final report in Spring 1991. The current recommendations regarding cholesterol measurements for children follow the recommendation provided by the American Academy of Pediatrics as described in the article on the following pages. A brief summary of the recommendations in the article follows:

Children (19 years of age and younger) should not be screened for total blood cholesterol. If there is a family history of heart disease, the child should be examined by the family physician.

If cholesterol screening of children is an issue in your community, you may use this interest as an opportunity to provide education. Topics to address would include:

- awareness of other cardiovascular disease risk factors
- reduction in controllable risk factors or habits that contribute to them
- stress importance of blood cholesterol screening in parents--by identifying at-risk parents, at-risk children will be identified.

Indications for Cholesterol Testing in Children

The American Academy of Pediatrics' Committee on Nutrition believes that a child with a family history of either early coronary heart disease or hyperlipidemia should have a complete evaluation, including serum or plasma measurement of cholesterol, other lipids, and lipoproteins. On the other hand, the Committee on Nutrition does not favor universal testing of blood cholesterol levels of children either in the hospital or in the office of the private physician. At this time, the value of routine testing appears outweighed by the disadvantages; office testing has additional limitations.

We believe that universal cholesterol testing should not be part of continuing well-child care for the following reasons.

1. The standardization of equipment and the measurement of cholesterol are fraught with difficulties. Precision and accuracy are essential components of any laboratory measurement. Survey data show that replicate measurements of a sample containing 240 mg/dL of cholesterol resulted in values ranging from 192 to 288 mg/dL.¹ Because a low-fat diet could only be expected to decrease the cholesterol level 10% to 15% (204 to 216 mg/dL), an improvement could thus be obscured by the error of the measurement.

2. Many of the instruments suggested for the measurement of cholesterol in the office have not been adequately standardized for field conditions. Cholesterol measurements obtained from an assortment of instruments available commercially ranged from 187 to 379 mg/dL (the reference standard was 262 mg/dL).¹ Hospital laboratories are often precise but not always accurate; office determinations frequently lack both precision and accuracy. Moreover, proper performance of this laboratory procedure requires technical skill not al-

ways available in the office. Necessary quality control precautions are often not practiced by personnel, including physicians not trained in laboratory techniques.

3. A single blood cholesterol level in children may not reflect diurnal, day-to-day, and seasonal variations. Thus, measurements obtained serially throughout several months may be required to identify those with persistent elevations.

4. A sporadic elevated concentration of cholesterol in a child with no high-risk family history of coronary heart disease could lead to the initiation of severe dietary (or even drug) control that would be difficult to maintain in a growing child. In fact, such an unwarranted diet or treatment could be deleterious to growth and development.

RECOMMENDATIONS

We suggest regular elective testing of children >2 years of age who have a family history (parent, sibling, grandparent, uncle, aunt) of hyperlipidemia or early myocardial infarction (<50 years of age in men, <60 years of age in women). For children with borderline and elevated values, several tests in the fasting state should be obtained, including total cholesterol, triglyceride, and high-density lipoprotein cholesterol determinations. Secondary hyperlipidemia resulting from drug use or renal, endocrine, and hepatic disease should be excluded before embarking on any regimen. The values that may predict future coronary heart disease are not yet established for children, but children with values persistently exceeding the 75th percentile (average percentile levels for male and female individuals 0 to 19 years of age, 176 mg/dL)² for plasma cholesterol should be considered for dietary counseling, which is the level recommended for adult dietary intervention.³ Dietary intervention often requires many months of nutritional counseling by an experienced registered dietician. Because the long-term efficacy of drugs to treat hypercholesterolemia has not been evaluated in children, pharmacotherapy should be undertaken with caution. It should be considered for those children with extremely

The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.

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high cholesterol levels (>95th percentile, 200 mg/dL)² and only after dietary intervention alone has been ~~successful~~ unsuccessful.

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1. *Current Status of Blood Cholesterol Measurements in Clinical Laboratories in the United States: A Report From the Standardization Panel of the National Cholesterol Program*, NIDDK publication No. 88-2928. National Heart, Lung, and Blood Institute, 1988
2. *Lipid Research Clinic Data Book*, National Institutes of Health publication No. 50-1527. Government Printing Office, July 1950

PUBLIC SCREENING PROTOCOLS

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This section details the steps involved in performing the actual procedure on the day of screening and education. There are three stations at the screening site. Quality control procedures are also outlined. Photo-ready copies of forms and additional education materials are included.

STATION 1: Registration

STATION 2: Measurement

STATION 3: Education and Referral

QUALITY CONTROL

FORMS and ADDITIONAL EDUCATION MATERIALS:

- Informed Consent
- Education Message
- Medical Care Referral Information
- Sample of Follow-up Reminder Letter
- Basic Definitions
- Commonly Asked Questions
- Good and Bad Cholesterol: What's The Difference
- Recommended Materials and Resources

STATION 1: Registration

CONCERNS:

- Staff should be dressed in a professional manner.
 - Staff should wear nametags.
 - Provide additional seating for those waiting.
-

MATERIALS:

- ___ Informed Consent forms
 - ___ Education Message sheets
 - ___ Appointment book (if appointments are scheduled)
 - ___ Pens
 - ___ Clipboards
 - ___ Table and 2-3 chairs
 - ___ Wastebasket
 - ___ Cash box with adequate petty cash (if charging for program)
 - ___ Sign identifying screening organization
-

SET-UP:

- ___ Table and 2-3 chair for staff and participants
 - ___ Additional seating for those waiting
 - ___ Display sign identifying screening organization
 - ___ Have adequate petty cash available to provide participants with change (if charging for program)
 - ___ Fill in screening organization name on the two lines provided in the text of the Informed Consent form
 - ___ Fill in information on the top of enough Education Messages based on the number of participants expected at the screening that identifies:
 - 1) screening organization
 - 2) location of screening
 - 3) method of blood drawing technique
 - 4) today's date
 - ___ Stamp or write in the screening organization logo/address on the back of the Education Message in the space provided next to the American Heart Association address.
-

PROCEDURE:

- ___ Greet participant
- ___ Give participant Informed Consent and Education Message. Explain how to complete Informed Consent form. Be aware that some participants with special needs may require additional assistance (illiterate, physically handicapped)

- Stress importance of filling out forms completely and accurately. Tell participants:

"The Informed Consent form explains that the cholesterol measurement you receive today is not a diagnosis that you do or do not have high blood cholesterol. If you have had a heart attack, stroke or surgery in the past 8 weeks, or if you have been pregnant or had a baby in the past 4 months, today's measurement will not reflect your usual level. You are responsible to check your cholesterol number with your doctor. Your name and cholesterol number will be kept confidential. Please complete the top of the form and date and sign at the bottom of the form. There is a check-off box at the bottom to indicate whether or not you want to be recontacted for other programs."

 - If a participant is unwilling to sign the Informed Consent form, they ARE NOT ALLOWED TO HAVE BLOOD DRAWN FOR THE CHOLESTEROL MEASUREMENT.
 - If the participant is under 18 years of age, a parent or guardian must sign the Informed Consent form.

NOTE: IT IS NOT RECOMMENDED THAT PERSONS LESS THAN 20 YEARS OF AGE BE SCREENED.
- Instruct the participant to write their name on the top of the Education Message. Ask participants to read the form and fill in Box 1 and 2 as they proceed through the screening. Tell participants that staff at the Education and Referral Station will review the form with them after they have received their cholesterol number.
- Tell the participant how their questions will be answered:

"Any questions you have about the cholesterol measurement will be answered at the Measurement Station. All other questions about cholesterol will be answered at the Education and Referral Station."
- Check to be sure participant has completed and signed the Informed Consent. If participant wants a copy of the form, give them a blank form to keep.
- Advise participants to take their Informed Consent form and Education Message with them to the next station.
- Collect fee (if applicable).
- Direct participant to STATION 2: Measurement, or the waiting area.

STATION 2: Measurement

CONCERNS:

- Protect participant and staff from blood borne illness.
 - Protect participant and staff from injury.
 - Protect participant privacy.
 - Insure collection of adequate blood sample.
 - Establish criteria for calibration of analyzer.
 - Establish criteria for quality control sampling.
 - Establish criteria for repeat tests.
 - Eliminate errors in transcribing results.
 - Provide additional seating for those waiting.
-

MATERIALS:

- ___ Analyzer
 - ___ Controls
 - ___ Autolet
 - ___ Capillary pipettor
 - ___ Control pipettor
 - ___ Control samples
 - ___ Reflotron check strips
 - One each per participant:
 - ___ Lancets
 - ___ Capillary tubes
 - ___ Gloves
 - ___ Alcohol wipes
 - ___ Bandages
 - ___ Cotton balls, gauze pads
 - ___ Sharps container/hazardous waste container
 - ___ Waterproof table cover
 - ___ Ammonia inhalant
 - ___ Cot
 - ___ Pen
 - ___ Bleach solution (1:10) for clean-up of spills
 - ___ Wastebasket with plastic liner
 - ___ Extension cord
 - ___ Heating pad (to warm cold hands in cold weather)
-

SET-UP:

- ___ Table and two chairs
- ___ Additional seating for those waiting
- ___ Set-up analyzer in manner to insure privacy of results from other participants

SANITATION:

Because of the invasive nature of obtaining the sample, strict precautions must be taken to avoid exposure to infection for participant and staff. Important considerations include:

1. Multiple, strategically-placed, biohazard receptacles should be used for disposal of lancets and capillary tubes. Gloves, gauze, sponges and strips with blood on them are disposed of in plastic lined wastebaskets.
2. All biohazard containers and sealed garbage bags need to be disposed of in the approved manner.
3. Discard any towel or pad that has blood accidentally spilled or smeared onto it and replace with a clean one.
4. Each participant should be given a bandage and asked to discard blood gauze in plastic lined wastebaskets before leaving measurement station.
5. Clean area with bleach solution after each participant and utilize handwashing facilities.

BLOOD SAMPLE COLLECTION PROCEDURE (Reflotron)

- ___ Greet participant. Ask them to be seated and wait five minutes before doing fingerstick.
- ___ Verify signed Informed Consent form.
- ___ Create a "sterile field" effect with paper towel.
- ___ Put on new gloves for each participant.
- ___ Set autolet: new lancet and appropriate platform used for each participant.
- ___ Insert capillary tube into pipettor.
- ___ Remove one new test strip from vial, replace cap.
- ___ Peel off aluminum (silver) foil from test strip and discard.

OBTAIN BLOOD SAMPLE:

- ___ Select second or third finger from non-dominant hand.
- ___ Wipe the finger thoroughly from front to back (tip of finger to the first joint) with an alcohol wipe. Allow to air dry.
- ___ Place loaded autolet on outer aspect (side) near top of finger.
- ___ Slightly squeeze finger below tip to provide a firm puncture site. If the blood sample is taken too soon and contains alcohol from the cleansing of the site, the reading will be inaccurate.

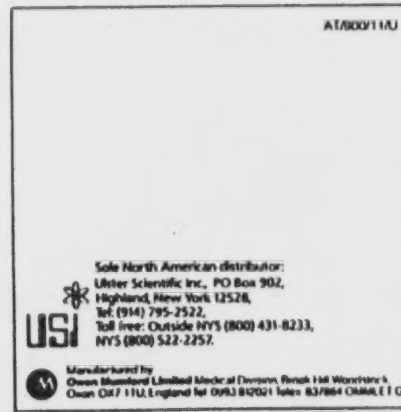
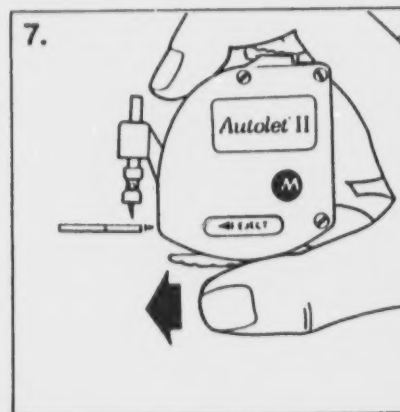
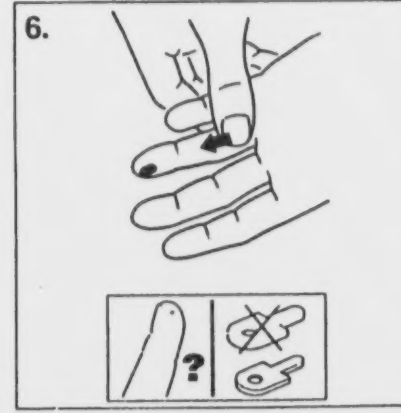
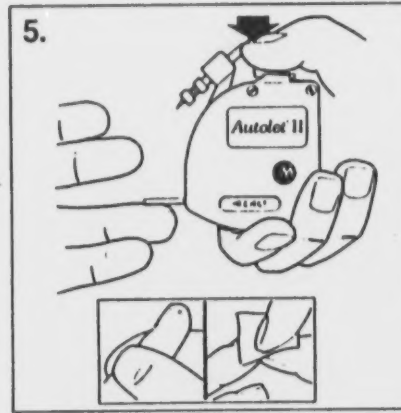
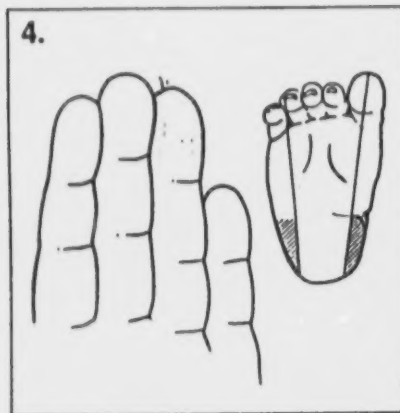
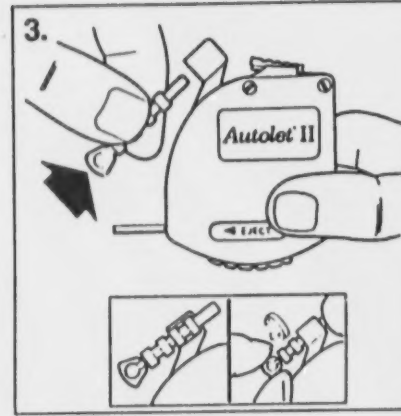
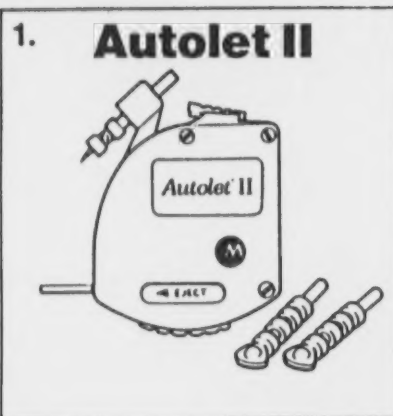
- ___ Press to activate the lancet. Gently wipe off the first drop of blood. Regardless of type of device used to do the fingerstick, it is very important that the finger not be squeezed vigorously, milked or massaged after the puncture. That will change the sample composition and invalidate the reading.
- ___ Hold capillary tube just about vertical to the finger to fill. Fill capillary tube to mark given on tube.
- ___ If blood does not readily flow, squeeze, release, squeeze, release. Never squeeze finger tip tightly. Holding an arm or finger tightly will reduce the amount of blood flowing to the finger and may be the cause of not getting enough blood.
- ___ Deliver blood from capillary tube directly onto red mesh on test strip. **DO NOT LET TUBE TOUCH RED MESH.**
- ___ Place test strip into Reflotron analyzer with red mesh up. **DO WITHIN 15 SECONDS.**
- ___ Close the door, wait 175 seconds (approximately 3 minutes).
- ___ Give participant bandage and ask them to put it on, discarding any gauze before leaving Measurement Station.

RECORD RESULTS:

- ___ Record cholesterol results and other information (except for "risk factors ") on the bottom of the Informed Consent form.
- ___ Record cholesterol measurement on Education Message. Do not tell the participant what their cholesterol measurement is verbally unless you are in a private booth.
- ___ Thank participant and direct to Education and Referral Station or waiting area.

SANITATION:

- ___ Clean up any spills with bleach solution (1:10).
- ___ Dispose of all materials contaminated with blood into the biohazard receptacle. Dispose of other materials in the plastic lined wastebasket. Remove and discard gloves.
- ___ Prepare for next participant.



Instructions for Use Autolet II

1. Autolet II, when used with Owen Mumford's purpose designed Unilet Lancets and platforms comprises a unique SAFE capillary blood letting system which meets the particular requirements of multi-patient/hospital situations in addition to the needs of individual home blood monitoring patients.

Both the Unilet lancets and the Autolet platforms can be ejected semi-automatically after use thus preventing injury and possible infection from contaminated lancets and platforms.

2. Insert a fresh* single-use platform which will only go in with the flat side uppermost (*This is not necessary for home blood monitoring patients so long as normal standards of cleanliness are observed)
Depth of penetration: Yellow/Normal - 2.4mm
Orange/Extra - 3.0mm

3. Insert a fresh* single-use Unilet pushing it firmly into place and then twist off cap (*For individual home blood monitoring patients - this is recommended for comfort)

4. Site Selection
a. (1) Adults and Children The second or third finger in the area illustrated in Fig 4 is usually preferred (The earlobe may still be exclusively used in some Countries).

a. (2) Neonates and Babies The plantar surface of the heel medial or lateral to the lines shown in Fig 4. Ensure that only the yellow platform is used for Neonates and babies.

b. Ensure that the chosen site is warm, clean and prepared in the recommended manner (Individual home blood monitoring patients should wash the site with soap and warm water. Prolonged use of surgical spirit is not advised).

c. Ensure a good blood supply to the site by gentle manipulation.

5. Place finger firmly under platform and press button. Squeeze gently and wipe away first drop with a cotton wool swab.

6. Milk finger as shown. Do not squeeze hard at the site. If sample insufficient try the orange/extra platform. Once blood collection is complete pull back the Autolet II arm.

7. Eject the platform by pushing slider forward and dispose of directly into a suitable disposal container - Insert a fresh Unilet and platform for next operation.

8. Eject the Unilet by pushing it out of the socket directly into a suitable disposal container.

Infection Control (This is not necessary for individual home blood monitoring patients as long as normal standards of cleanliness are observed). Autolet II is fully autoclavable. Chemical disinfecting can readily be achieved by immersing Autolet II into freshly prepared 2% Glutaraldehyde for 30 minutes followed by aqueous rinsing and drying at temperatures not exceeding 50°C.

Autolet II should be cleaned periodically to remove any visible contamination using warm water and a small brush.

The Autolet II comes complete with its own case and an initial supply of single-use Unilets and Platforms.

Further supplies of Autolet II's, Unilets and Platforms can be obtained from your local Distributor or from Owen Mumford Ltd.

Owen Mumford Ltd is following a policy of continuous development, reserve the right to modify or make changes to any of the equipment or accessories described at any time and without prior notice.

Owen Mumford Limited

Reflotron® Capillary Pipettor Cat. No. 832359

For *in vitro* diagnostic use. Use only with capillary blood specimens.
Use with Reflotron® 30 µL Capillary Tubes, Catalog No. 832375.

Contents: Reflotron® Capillary Pipette • Platform Adapter
• Instructions.

Manufactured for:

BOEHRINGER
MANNHEIM
DIAGNOSTICS

9115 Hague Road, Indianapolis, IN 46250



Directions for Use:

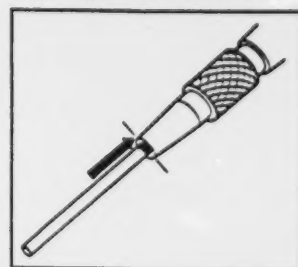
1. Remove foam disc from Capillary Tube container. Replace metal cap. Tubes now may be dispensed individually through the hole in the top of the container.
2. Remove Capillary Tube from container by inverting the tube.



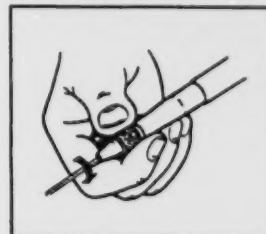
3. Loosen collet (knurled tip) 1/2 turn counter-clockwise.



4. Insert the banded (colored) portion of the Capillary Tube into the end of the Pipettor. Slide the Capillary Tube in until the black calibration line is flush with the end of the collet. Ensure the Capillary Tube is seated.

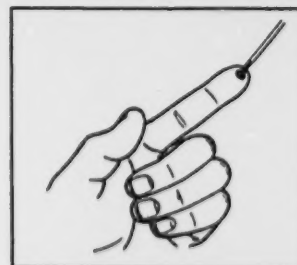


5. While holding the Capillary Tube against the stop, tighten the collet by turning it clockwise until snug. Do not overtighten.



6. Prepare capillary blood sample according to standard laboratory practices.

7. Touch the end of the Capillary Tube to the capillary blood sample. The blood will be drawn up the tube, via capillary action, to the 30 µL calibration line.

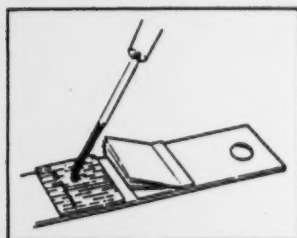


8. Wipe any excess blood from the end of the tube with a lint-free tissue. Do not touch the blood sample in the tube with the tissue.



9. Dispense the sample onto the Reflotron[®] reagent strip by slowly depressing the Pipettor plunger; the sample is applied to the red separation zone. The plunger will dispense the blood from the Capillary Tube.

Note: Do not touch the red mesh with the end of the Capillary Tube; let the blood sample form a drop and touch the drop to the center of the red separation zone.



10. Place the reagent strip into the Reflotron[®] measuring chamber as described in the specific test instruction sheet and/or the Operating Instructions section of the Reflotron[®] Operator's Manual.
11. Loosen the collet, remove the used Capillary Tube, and discard in an approved container. Capillary Tubes can be used only once.

Note: As an alternate procedure, one may first draw up the sample and then secure the Capillary Tube into the Pipettor. Make sure the banded (colored) end of the Capillary Tube is inserted into the Pipettor. Tighten the collet.

Use of Platform Adapter:

The Platform Adapter provides for convenient storage of the Pipettor in the Reflotron[®] Accessories Platform.

Place the Platform Adapter in one of the holes of the Accessories Platform.

Materials Provided:

Reflotron[®] Capillary Pipettor,
Catalog No. 832359
Platform Adapter
Instructions

Materials Required (But Not Provided):

30 μ L Capillary Tubes, Cat. No. 832375
(100 Tubes)
Reflotron[®] Instrument, Cat. No. 747459

Note:

If a clot is observed in the Capillary Tube, please discard. If a portion of blood has already been placed on the reagent tab and a clot is observed, please discard the tab and Capillary Tube.

When inserting the Capillary Tube into the Pipettor, hold the Tube near the middle and insert with a smooth motion. Holding the Tube near the end may cause the Tube to break.

For full details on the Reflotron[®] system, refer to the Reflotron[®] Operator's Manual.

Manufactured for:
Boehringer Mannheim
Diagnostics Division
9115 Hague Road
Indianapolis, IN 46250

052778902-0387

STATION 3: Education and Referral

CONCERNS:

- Use current NCEP standards for classification and referral.
 - Maintain confidentiality of participant information.
 - Provide additional seating for those waiting.
 - Help participant understand meaning and limitations of a single blood cholesterol level, causes of variability and need for multiple measurements.
 - Emphasize relationship between healthy eating pattern and lower blood cholesterol.
 - Encourage confirmatory testing with doctor.
 - Referral link in place for working with medical community.
-

MATERIALS:

- ___ Script for Education Message
 - ___ Medical Care Referral information
 - ___ Follow-up Reminder letter
 - ___ Basic Definitions
 - ___ Commonly Asked Questions
 - ___ Good and Bad Cholesterol: What's the Difference
 - ___ Pen
-

SET-UP:

- ___ Table and two chairs in an area that provides privacy.
 - ___ Additional seating for those waiting.
-

PROCEDURE:

- ___ Greet participant.
- ___ Ask participant for Education Message and Informed Consent form.
- ___ Complete bottom of Informed Consent form with risk factors. Retain for screening organization records.
- ___ Quickly check Education Message to see that it has been completed with date and location of screening, method of measurement.

- ___ Discuss Education Message using SCRIPT provided.
- ___ Complete name and address on Follow-up Reminder letter.
- ___ Provide Medical Care Referral information if needed.
- ___ Offer participant additional education materials as requested.
- ___ Thank participant for attending screening.

EDUCATION MESSAGE SCRIPT

Hello. My name is _____. I would like to talk to you about cholesterol and what you can do about your blood cholesterol level.

Show participant their cholesterol measure on the top of the Education Message.

The number you received today is a measure of your total blood cholesterol level.

Cholesterol is a waxy substance found in your blood. Your body needs cholesterol for its normal functions. Your liver makes most of the cholesterol that your body needs.

Many things contribute to your blood cholesterol level including:

your age -- as you get older your cholesterol level tends to increase

your family history -- high blood cholesterol may be genetic

how much you weigh -- being overweight may cause your cholesterol level to be higher

the foods you eat -- foods high in fat may increase your cholesterol level

When your blood cholesterol level is above 200 mg/dl, your chance for heart disease increases. This is why blood cholesterol is called a risk factor for heart disease. There are other risk factors for heart disease. Some risk factors can be changed, other cannot.

Refer participant to the other risk factor list on the Education Message.

Let's see if any of the risk factors describe you.

Refer to first part of other risk factor list on Education Message.

The risk factors that you can change, along with blood cholesterol, are:

- smoking cigarettes
- high blood pressure
- overweight
- low HDL-cholesterol level

Refer to second part of other risk factor list on Education Message.

The risk factors that you cannot change include:

- male
- diabetic
- already have heart disease
- if a member of your immediate family died of heart disease before they were 55 years old (your mother, father, or any brother or sister)

Fill in the total number of other risk factors on the Education Message.

Refer to the Education Message.

Check the participant's cholesterol level and other risk factor box on the Education Message and read the action to take for rechecking their blood cholesterol level.

Have participant complete reminder letter.

If no, give participant Medical Care Referral information.

Refer participant to the back side of the Education Message, What You Eat Makes a Difference.

You have checked _____ risk factors that describe you. (If you don't know your risk factors, see your doctor.)

If you have more than one risk factor, your chance of having a heart attack or stroke increases.

Your blood cholesterol measure today was _____ mg/dl and you have checked _____ other risk factors.

Based on this information, you should recheck you blood cholesterol level:

We would like you to put your name and address on this letter so we can send you a reminder to have your cholesterol measured by your doctor.

Do you have a doctor or health care provider that could measure your cholesterol?
I would like to provide you with the name of a doctor or clinic that could recheck your cholesterol?

Like your blood pressure, your blood cholesterol level varies. We recommend that you have your blood cholesterol tested more than once to know your true blood cholesterol level.

Your total blood cholesterol is a measure of all the cholesterol in your blood including your HDL-cholesterol, LDL-cholesterol and triglycerides. If your total blood cholesterol level is high, your doctor may check these other levels. This is done with a more expensive test which gives your doctor a more complete picture of your risk for heart disease.

Let's look at some tips for making choices in what you eat.

The most important thing that you can do to lower your blood cholesterol or keep it low is to eat foods low in fat, especially saturated fat and cholesterol. The foods high in saturated fat include animal products such as meats, eggs, cheeses, butter, whole milk and some plant oils such as coconut and palm oil.

Saturated fats are usually hard at room temperature. Cholesterol is found only in foods from animal products.

Think about the kinds of foods you usually eat. Are there some changes that you can make? You may choose foods lower in fat. You could eat smaller portions. If you eat fast foods or restaurant foods often, you could select menu items that are low in fat. You can also cook foods using little or no fat.

*If time allows,
ask participant
to identify one
diet point to
work on.*

Look at the suggestions listed on this form. These are ideas that you can try over time. Pick one or two and make your changes slowly. It takes time to adjust to new eating habits. When you are successful at those changes, add one or two more.

You can reduce your cholesterol level and your risk for heart disease with a healthy lifestyle that includes:

- eat a low-fat diet
- exercise
- if you are overweight, reduce your weight
- don't smoke

If you have any questions, or need more information about your cholesterol level, there are some resources for you:

- your doctor
- American Heart Association
- other materials provided here

Collect Informed
Consent form and
Medical Care
Reminder letter.

Quality Control

REFERENCE LAB CONTACT:

Establish a contract with an area reference laboratory. Brief descriptions and contact person for three area reference laboratories follow this section.

PRIOR TO SCREENING DAY:

Each analyzer should be evaluated and demonstrate acceptable performance in the lab setting before field (screening) use. Individual analyzers differ and the quality of the measurement from each analyzer must be established. Analyzers not meeting these standards should not be used until appropriate corrective measures have been taken and documented. This evaluation should include:

1. Obtain control samples that are traceable to the Centers for Disease Control (CDC) reference laboratory standards and that are near the 200 and 240 mg/dl levels.
 2. Multiple runs of these control samples should be made in a laboratory over a two-week period on five to ten different days and appropriate quality control limits established for each analyzer.
-

DAILY SCREENING QC PROCEDURE:

1. Maintain a QC Record for each analyzer. Include date of screening, instrument number, operator initials, results of the analyzer system check and results of all control samples run throughout the screening day. (See sample QC Record included in this section.)
2. Perform analyzer system check according to manufacturer insert. Record results on QC Record.
3. A control serum pool from the analyzer manufacturer or reference laboratory should be analyzed at the beginning of the screening day. Control samples bracketing the 200 and 240 mg/dl values should be used alternately throughout the day. Record results on the QC Record. If results differ by more than 5% from the range for the control sample provided by the manufacturer or reference lab, run a second control sample. If it is still greater than 5%, the analyzer should be taken out of service until the problem has been corrected.

4. After every 20 participant samples run, a control sample should be run. Make sure to alternate the control samples run between the 200 and 240 mg/dl values. If you ran a low (200 mg/dl) control sample when setting up the analyzer, run a high (240 mg/dl) control sample next. Continue to alternate the control samples. Record results on the QC Record. Again, if results differ more than 5%, run a second control sample. If it is still greater than 5%, the analyzer should be taken out of service until the problem has been corrected. If less than 20 samples are run in a screening day, run control samples at the beginning and end of the screening and every four hours.

5. A blind sample from a reference laboratory should be analyzed each day. Results should be recorded on the QC Record and the value should be reported to the reference laboratory.

6. Remeasure any participant values that are above 300 mg/dl or below 100 mg/dl.

7. A record for each screening should be maintained. It should identify the screening date, location, total number of participants screened, and the staff working at the screening location.

DOCUMENTATION:

1. An operations manual should be kept with the analyzer for operating and troubleshooting.

2. QC Records should be reviewed regularly by supervisory staff.

3. Screening staff should maintain records of all participants and their results (Informed Consent forms).

4. The analyzer should provide hard copy readout to minimize transcription errors.

PRACTICE NAME _____

TEST

UNITS

LOWER LIMIT				MEAN		UPPER LIMIT			
DATE	No.	VALUE	TECH	COMMENT	DATE	No.	VALUE	TECH	COMMENT
	1					17			
	2					18			
	3					19			
	4					20			
	5					21			
	6					22			
	7					23			
	8					24			
	9					25			
	10					26			
	11					27			
	12					28			
	13					29			
	14					30			
	15					31			
	16								

DATE:

DATE: _____

The figure shows a blank control chart grid. At the top, there is a row of numbers from 1 to 31, representing days of the month. Below this, the grid is divided into three main horizontal sections by three lines. The top section is labeled 'UPPER LIMIT' on the left. The middle section is labeled 'MEAN' on the left, and a small 'X' is marked on the horizontal line that separates the upper and middle sections. The bottom section is labeled 'LOWER LIMIT' on the left. The grid consists of a series of vertical lines corresponding to the numbered columns and horizontal lines within each section.

A
NATIONAL REFERENCE METHOD
LABORATORY NETWORK
FOR

**The
National
Reference System
for
Cholesterol**

U. S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL
Center for Environmental Health
and Injury Control
Division of Environmental Health
Laboratory Sciences
Atlanta, Georgia

National Reference Method Laboratory Network
Participating Laboratories

State Laboratory of Hygiene
University of Wisconsin
Center for Health Sciences
465 Henry Mall
Madison, WI 53706
Contact Person: David Hassemer.
Telephone: (608) 263-3692

Pennsylvania State Department of Health
Bureau of Laboratories
Division of Chemistry and Toxicology
P.O. Box 500
Exton, PA 19341-0500
Contact Person: Irene E. Daza
Telephone: (215) 363-8500

* Biochemical Epidemiology and Lipid Research Core
(BELRC) Laboratory
Division of Epidemiology
School of Public Health
Stadium Gate 27
611 Beacon Street, S.E.
Minneapolis, MN 55455
Contact Persons: John Belcher, Ph.D.
Veronica Hill
Telephone: (612) 624-2183

Northwest Lipid Research Center
Room 732 Harborview Hall
326 Ninth Avenue
Seattle, WA 98104
Contact Person: G. Russell Warnick
Telephone: (206) 223-3236/3148

USDA Human Nutrition Research Center on Aging
at Tufts University
711 Washington Street, Room 501
Boston, MA 02111
Contact Person: Judy McNamara
Telephone: (617) 556-3104

MIDWEST REGIONAL LIPID LABORATORY

COLLECTION AND SHIPPING OF BLOOD FOR CHOLESTEROL TESTING:

1. Collection:

- a. A specimen is collected in a red top tube.
- b. If a tourniquet is applied, it should be removed as quickly as possible and should not be left on for more than two minutes.

2. Processing:

- a. If a syringe is used, carefully transfer the whole blood to an evacuated red top tube.
- b. Allow the red top tube to sit for 15-30 minutes for complete clot formation.
- c. After clot formation, spin the red top tube in the centrifuge for 15 minutes at 2500 rpm (1500 x g). DO NOT let the tube sit for more than two hours before centrifuging the specimen.
- d. Transfer the serum to a plastic screwtop vial. Secure the top with tape to avoid leakage of the serum sample.
- e. All serum specimens should be labeled with the patient's name, the date drawn, and the institution's (agencies') identification number or initials.

3. Storage:

- a. The serum specimen should be stored frozen at -20°C, until the specimen can be shipped to the Midwest Lipid Laboratory. The specimen should not be stored more than one week before it is shipped.

4. Shipping:

- a. The lipid samples should remain frozen while they are shipped by utilizing dry ice. The samples and dry ice should be placed into a styrofoam container and shipped via Federal Express to the following address:

MIDWEST REGIONAL LIPID LABORATORY
900 SOUTH EIGHTH STREET, BLDG D, RM 431
MINNEAPOLIS, MN 55404

CONTACT PERSONS: CHERYL KRAFT, LAB MANAGER
(612)347-5967
KIM HANGGI, LIPID LAB SUPERVISOR
(612)347-5908



STATE LABORATORY OF HYGIENE

University of Wisconsin Center for Health Sciences

AREA CODE 608
TEL. NO. 262-1293

WILLIAM D. STOVALL BUILDING
465 HENRY MALL
MADISON, WISCONSIN
53706

THE NATIONAL REFERENCE SYSTEM FOR CHOLESTEROL

(A proposed protocol for instruments utilizing whole blood specimens)

Clinical laboratories wishing to establish traceability to the National Reference System for cholesterol should use the following protocol. This protocol is designed to assess the accuracy of a cholesterol method. The precision of the method should be assessed in-house and found to meet NCEP guidelines prior to using this protocol.

Analyze a minimum of 6 patients. Perform fingerstick analysis in duplicate (2 separate specimens) and obtain a venipuncture specimen at the same sitting. Centrifuge and remove serum from cells within 2 hrs. of collection. Serum should be free from hemolysis and lipemia and stored at 2 - 8 °C until sent (cholesterol is stable for 1 week at 2 - 8 °C). Specimens should cover a minimum range of 100 mg/dL from lowest to highest concentration (e.g. 180 - 280 mg/dL) and include the 200 and 240 mg/dL medical decision making levels. Submit 1.5 mL of each serum specimen to our laboratory (address below). Aliquot and freeze any remaining serum in your laboratory for future use. To avoid matrix effects do not submit pooled specimens. The Abell-Kendall reference method will be performed in singlicate on each specimen. (Cost: \$150/6 specimens)

Additional specimens may be submitted for Abell-Kendall analysis at a cost of \$25/specimen.

A Certificate of Traceability will be issued to instruments demonstrating acceptable performance. These certificates are valid for 6 months from date of issue.

All serum specimens submitted for Abell-Kendall analysis should be sent Monday-Thursday (using overnight delivery) in an insulated container with a cold pack to:

Clinical Chemistry Section
Wisconsin State Laboratory of Hygiene
465 Henry Mall
Madison, WI 53706

Attention: Barbara Hill

Please complete the **INFORMATION FORM** on the reverse side of this letter and include it with your specimens. Any questions concerning this protocol should be directed to Dave Hassemer (608) 263-3692 or Barb Hill (608) 262-3459.

Sample Informed Consent form
CHOLESTEROL SCREENING

Last name, first name M.I. Birthdate ☐ Male ☐ Female Telephone number

Address City State Zip

I request that _____ take a sample of blood to measure my total cholesterol level.
I release _____ and all other individuals involved in this cholesterol screening
from any liability, responsibility or damages which may arise from this screening or my cholesterol
test results. I am aware that:

1. The result from this screening test is not a diagnosis that I do or do not have high blood cholesterol.
2. Responsibility for follow-up to confirm my cholesterol test results and obtain further medical help is mine alone and not that of the organizations and or individuals associated with the screening.
3. Any information I provide at this screening, and my cholesterol test results, will remain confidential. The information I provide may be accessible to employees of the county health department or the Minnesota Department of Health to develop statistical reports in which I would not be identified. This data will not be available to any others without my prior written authorization.
4. I understand that a cholesterol measurement will not reflect my usual level if any of the following describe me:
 - I have had a heart attack, stroke or surgery in the past 8 weeks,
 - I have been pregnant or had a baby in the past 4 months.
5. Cholesterol test results may vary depending on when the test is conducted, the machine used and other factors. My screening results today may differ from previous tests or future tests.
6. I understand that there is a minimal risk from participating in this screening. In the event of injury due to participation in this screening, medical treatment will be available including first aid, emergency treatment and follow-up care as needed. Payment for such treatment must be provided by me or my third party payor (such as health insurance, Medicare).
7. Any questions which have occurred to me have been answered to my satisfaction. I understand that I may ask additional questions at any time and that I am free to discontinue my participation in the screening at any time.

I have read (or had read to me) and understand this consent and release form. The signature of a parent or guardian is required if I am under 18 years of age.

Date Participant signature Parent/Guardian signature if under 18

We may wish to contact you again for other programs. If you do not want to be recontacted, please check this box..... ☐

=====

FOR OFFICE USE ONLY

Screening Location: _____ Cholesterol results: _____ mg/dl
Tech name: _____ Analyzer I.D. number: _____
Risk factors: _____

LEARN ABOUT YOUR BLOOD CHOLESTEROL LEVEL

Name: _____

Group Providing Service: _____

Location: _____

Venous Draw: ___ Fingerstick: ___ (check one)

Today _____ your total blood cholesterol measurement is _____ mg/dl.
(date)

A blood cholesterol level of 200 or higher, may increase your chance of having a heart attack or stroke. There are other factors listed below that may also increase your risk.

ACTION TO TAKE FOR YOUR BLOOD CHOLESTEROL LEVEL

1. To know what action you should take, CHECK the other risk factors for heart disease listed below that describe you.

- ___ cigarette smoker
- ___ high blood pressure
- ___ overweight
- ___ low HDL-cholesterol level
- ___ male
- ___ diabetic
- ___ personal history of heart disease (such as a heart attack or stroke)
- ___ family history of early heart disease (parent, brother or sister with a heart attack or stroke before the age of 55)

2. ☐ COUNT the number of risk factors checked above and WRITE the total in the box.
(See your doctor if you do not know your risk factors.)

3. CHECK the one box below that matches today's blood cholesterol measurement and your number of other risk factors. READ across to find the action you should take.

If your blood
cholesterol level is:

below 200 with or
without other risk
factors

☐

Recheck your blood
cholesterol level with your
doctor in the next 5 years.

200-239 with 1
or no other risk
factors

☐

Recheck your blood
cholesterol level with your
doctor in the next year.

200-239 with 2 or
more other risk
factors

☐

See your doctor within 2
months to recheck your
blood cholesterol level.

240 or above with or
without other risk
factors

☐

See your doctor within 2
months to recheck your
blood cholesterol level.

Like your blood pressure, your blood cholesterol varies. More than one measurement is recommended to best determine your usual blood cholesterol level.

WHAT YOU EAT MAKES A DIFFERENCE

The most important thing you can do to reduce or keep your blood cholesterol level low is to eat foods low in fat, especially saturated fat, and cholesterol. Try these tips for making choices in what you eat.

- Choose fish, poultry (remove the skin), and lean red meats (trim the fat). Keep the total amount to 6 ounces cooked or less each day. Three ounces cooked is about the size of a deck of cards.
- Eat at least 2 to 3 servings of skim or 1% milk and low-fat yogurt each day. (1 serving=1 cup) Limit use of cheese.
- Eat no more than 2 to 3 tablespoons of margarine, butter, salad dressing, mayonnaise, shortening, lard, and cooking oil each day.
- Eat at least 6 servings of bread, cereal, rice, pasta, potatoes, cooked dried peas or cooked dried beans each day. (1 serving=1 slice or 1/2 cup)
- Eat at least 5 servings of fruits or vegetables each day. (1 serving =1 piece fruit, 1 cup raw vegetables, 1/2 cup cooked vegetables)
- Eat no more than 4 egg yolks each week. Egg whites can be used as desired.
- Limit foods with hidden fat including donuts, sweetrolls, cakes, pies, cookies, candy bars, ice cream, potato chips, and fried foods.

NOTE: Children under 2 years of age should not eat a low-fat diet. It may be harmful to their growth and development. Pregnant or breastfeeding women and people with a medical condition should see their health professional for diet information.

For further information, measurement and evaluation of your total cholesterol, HDL-cholesterol, LDL-cholesterol and triglyceride levels, contact your doctor. Additional information on blood cholesterol is available from:

American Heart Association
Minnesota Affiliate, Inc.
4701 West 77th Street
Minneapolis, Minnesota 55435
(612) 835-3300

REMEMBER

Healthy habits--like eating a variety of foods low in fat, being physically active, and not smoking--can reduce your chance of having a heart attack or stroke.

Medical Care Referral Information

Provide a list of area physicians who are willing to accept referral from participants that do not currently have a health care provider.

OR

Provide an address and phone number of your community's Medical Society so that participants without a health care provider may locate one on their own.

Sample of Follow-up Reminder Letter

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Participants who are at risk should seek medical attention. A follow-up reminder should be made to all of the participants who you determined were at risk. The reminder may be in the form of a phone call or letter. The participant should be contacted with this reminder in 1-3 months following the cholesterol screening measurement. A sample letter is shown below.

Date: _____

Name: _____

Address: _____

Dear _____,

On _____ you had your total blood cholesterol level measured at
(date)

_____. Your level was _____mg/dl and you
(screening location)

checked _____ other risk factors for heart disease. It is recommended that you
(number)

have your blood cholesterol level rechecked by your doctor based on the chart

below. If you have any questions, contact your doctor.

If your blood cholesterol level is:

below 200 with or
without other risk
factors

☐

Recheck your blood
cholesterol level with your
doctor in the next 5 years.

200-239 with 1
or no other risk
factors

☐

Recheck your blood
cholesterol level with your
doctor in the next year.

200-239 with 2 or
more other risk
factors

☐

See your doctor within 2
months to recheck your
blood cholesterol level.

240 or above with or
without other risk
factors

☐

See your doctor within 2
months to recheck your
blood cholesterol level.

BASIC DEFINITIONS

Atherosclerosis: Also called "hardening of the arteries." Results from a build up of cholesterol and other substances on the walls of the arteries. This build up can restrict or block blood flow to the heart, causing pain, a heart attack, or even death.

Cholesterol: A waxy substance that is part of every body cell membrane used to make hormones, vitamin D, bile acids, and other important substances.

Blood Cholesterol: Cholesterol that is carried in the blood for use by all parts of the body. This cholesterol is made in the body by the liver and is also absorbed from food.

Total Cholesterol: All of the cholesterol in your blood. This is the measurement most commonly received at a blood cholesterol screening. It consists of both HDL-cholesterol and LDL-cholesterol.

HDL-Cholesterol: High-density lipoproteins contain the greatest amount of protein and small amounts of cholesterol. They are believed to take cholesterol away from cells in the artery wall. HDL's have become known as "good" cholesterol.

LDL-Cholesterol: Low-density lipoproteins contain the greatest amounts of cholesterol and may be responsible for depositing cholesterol on the artery walls. For that reason, they have become known as "bad" cholesterol.

Dietary Cholesterol: This is the cholesterol in the diet. Dietary cholesterol is found only in foods of animal products and is not present in plant foods at all.

Triglycerides: Fats carried through the blood to the tissues. Most of the body's fat tissue is in the form of triglycerides, stored for later use as energy.

Lipoprotein: A fat-protein combination that carries cholesterol in the blood.

Risk Factor: Physical characteristic or behavior which increases the chance of developing heart disease.

Saturated Fat: A type of fat found in greatest amounts in foods from animal products, such as meat, poultry and whole-milk dairy foods. The saturated fat content is also high in some tropical plants such as coconut and palm oil. Saturated fat is usually solid at room temperature.

Unsaturated Fat: A type of fat that is found mainly in foods of plant origin. Unsaturated fat is usually liquid at room temperature. When substituted for saturated fat, unsaturated fat helps reduce blood cholesterol levels. Two types of unsaturated fat include monounsaturated fat and polyunsaturated fat.

Monounsaturated Fat: A slightly unsaturated fat that is found in greatest amounts from olive, peanut and canola oil.

Polyunsaturated Fat: A highly unsaturated fat that is found in greatest amounts in safflower, sunflower, corn and soybean oils. Polyunsaturated fat is also found in fish such as salmon, mackerel and herring.

Hydrogenation: A chemical process that changes a liquid vegetable oil (unsaturated fat) into a more solid saturated fat. This process improves the shelf life of the product, but also increases the saturated fat content. When some of the unsaturated fat has been changed to saturated fat, this is known as partial hydrogenation.

Fiber: Also called "roughage." The portion of plant food that cannot be digested by humans. Examples of foods high in fiber include whole grains breads, whole grain cereals, dried beans and peas, and some fruits (especially berries) and vegetables.

Soluble Fiber: Fiber that dissolves in water. In some people, soluble fiber appears to remove some excess cholesterol from the blood. Foods high in soluble fiber include oat and barley bran, dried beans and peas, some vegetables like corn and green peas, and some fruits like apples, pears and bananas.

mg/dl: The measurement used when determining blood cholesterol. It refers to how many milligrams (mg) of cholesterol are contained in one deciliter (dl) of blood.

COMMONLY ASKED QUESTIONS

The Cholesterol Measurement

1. My clinic always asks me not to eat for 12 hours before I have my blood tested. When and why is fasting required?
Fasting means you cannot eat or drink anything but water or black coffee. Total blood cholesterol can be measured any time of day, without fasting. The foods you have recently eaten do not change your total cholesterol level. You must fast for 12 hours before having your HDL-cholesterol and triglyceride levels measured, because what you have recently eaten does affect these levels.
2. Why is my cholesterol level different than it was last time it was tested?
Like your blood pressure, your blood cholesterol may vary from day to day. Two or more values are averaged to determine a usual blood cholesterol level.
3. I thought the American Heart Association recommended 300 as a safe cholesterol level. Why are your numbers different?
The difference is between blood cholesterol and dietary cholesterol. The number you received at the screening was your blood cholesterol measurement. It is recommended that a blood cholesterol of less than 200 mg/dl is desirable. The American Heart Association recommends that you eat foods of no more than a total of 300 mg of dietary cholesterol each day.

Risk Factors for Heart Disease

4. What are the other risk factors for heart disease and how do I know if I have them?
There are eight other risk factors that may add to a greater chance for heart disease. Four of them you can change and four of them you cannot change.

The four risk factors that you cannot change are:

***Male:** Males have a greater risk of heart disease than females.*

***Diabetes:** People with diabetes have a greater chance of having circulatory problems which may lead to heart disease.*

***Personal history of heart disease:** If you have already had a heart attack or stroke, you have heart disease.*

***Family history of heart disease:** If someone in your immediate family--parent, brother or sister--has had a heart attack or stroke before they were 55 years old, your chance of having heart disease is greater.*

The four risk factors that you can change are:

Tobacco user: *Of all of the risk factors that you can change, cigarette smoking has the greatest affect on heart health. The instructions are very clear: don't smoke.*

High blood pressure: *High blood pressure (more than 140 mg Hg/ 90 mg Hg) increases the risk for heart disease. Ways to reduce and control blood pressure include minimize stress, exercise, lose weight if you are overweight, reduce sodium intake if you are sensitive to it, and if you smoke--quit.*

Overweight: *Severe obesity (overweight by 30% or more) may increase the chance for developing heart disease.*

Low HDL-Cholesterol: *A low HDL-cholesterol level (less than 35 mg/dl confirmed by a repeat measurement) may increase the chance for developing heart disease. Ways to increase HDL-cholesterol include not smoking, doing aerobic exercise, and losing weight if you are overweight.*

5. How does smoking affect cholesterol levels?
Studies show that smoking lowers the good cholesterol (HDL). The greatest affect of smoking is on the arteries where chemicals in the smoke cause damage and promote cholesterol deposits. Some of the harmful affects of smoking disappear shortly after quitting.
6. Is blood pressure affected by high blood cholesterol?
There is no direct relationship. However, over many years some people develop deposits in their arteries due to a high cholesterol level. This can increase blood pressure.
7. What can I do, in addition to changing the way I eat, to lower my blood cholesterol level?
If you are overweight, losing weight helps. A program of regular vigorous exercise may raise the good cholesterol (HDL) which has been said to reduce the risk of heart disease.
8. What happens to my blood cholesterol level as I get older?
Blood cholesterol levels slowly increase with age.
9. Can hardening of the arteries be reversed?
This is currently being studied. It appears that some reversal of atherosclerosis is possible in some people when blood cholesterol is lowered. Lesions which are harder, or more calcified, probably do not reverse.

Nutrition Concerns

10. Does a diet to lower blood cholesterol help people who have had a heart attack or is it just for healthy people?
A diet to lower blood cholesterol can also help someone who has had a heart attack. Most of your blood cholesterol is produced by the liver. The rest comes from the diet. Because of this, you can control blood cholesterol with changes in what you eat. Diet changes may make blood cholesterol drop more in some people than others because of individual differences.
11. How sure are you that eating a low-fat diet can reduce my risk of heart disease?
There is no guarantee against heart attack or stroke. There are risk factors which increase the likelihood of heart attack and stroke. The major risk factors are cigarette smoking, high blood pressure, and high blood cholesterol. By lowering one risk factor--your blood cholesterol--you can reduce your risk of developing heart disease.
12. Since my cholesterol is in the high risk range, should I worry about my kids getting the same thing? Should they eat a special diet too?
Heredity plays a role in the cholesterol picture. With a family history of heart disease, children are at greater risk for developing heart disease. It is recommended that all Americans over 2 years of age choose a diet that limits dietary fat to 30 percent of calories. (Children under 2 years of age should not eat a low-fat diet.) In simple terms, people should eat more fruits and vegetables, grains and cereals, and eat less fried and high-fat foods. Good eating habits should be taught early in life.
13. How long will it take to lower my blood cholesterol?
It may take up to six months to reach maximum benefit from your diet. This depends on how many changes you make and how well you maintain them. You could see a small change in 2-3 weeks.
14. What is the difference between saturated and unsaturated fat?
Saturated fats are found in animal products and tropical oils such as coconut and palm oils. They are usually solid at room temperature. They may also be called hydrogenated or partially hydrogenated oils. These fats tend to raise blood cholesterol levels. Unsaturated fats come from plant products and are usually liquid at room temperature. These fats tend to lower blood cholesterol levels.
15. I've heard that oat bran lowers cholesterol. Is this true?
Studies have shown that in some people soluble fiber lowers cholesterol. Soluble fiber is found in oat and barley bran, dried beans and peas, vegetables like corn and green peas and fruits like apples, pears and bananas.

16. I like to have a drink now and then. I've read that alcohol is good for cholesterol problems. Is this true?
Alcohol is never recommended to treat heart disease. In some people, alcohol consumption may increase HDL-cholesterol, but on the average, alcohol has no effect on blood cholesterol. In addition, it damages the brain and liver, and can elevate blood pressure.
17. Why can two people eat the same thing and one has a higher blood cholesterol number?
Genetic factors play a major role in determining your blood cholesterol level. They can also determine how much you can change your level by changing your diet. A small number of people have inherited the tendency to have a high blood cholesterol level. For these people, changes in diet may not have as much affect on lowering blood cholesterol.
18. Will lowering my cholesterol level make me feel better?
If you decrease the amount of fat that you eat to lower your blood cholesterol, you may eat fewer calories and lose some weight. Weight loss helps to lower blood cholesterol and may make you feel better. Regular exercise may also help you feel better and help to lower your blood cholesterol level, through weight loss.

Medications and Supplements

19. Wouldn't it be easier for me to take medicine than to go to all of the trouble of changing my diet?
While medicines may seem easier than changing your diet, they really are not. They must be taken for the rest of your life and most medicines have side affects. The first step in treating high blood cholesterol is to make changes in eating habits. Very often these changes are successful at lowering blood cholesterol. For some people, diet changes alone are not enough to lower blood cholesterol. These people may need diet changes along with medications. Unfortunately, blood cholesterol-lowering medications also tend to be very costly.
20. I've heard fish oil tablets help fight cholesterol problems. I don't like fish so I bought some of the pills. Am I protected?
The long range affect of fish oil is not known. Additional research is needed. At this time, it appears that they do not lower blood cholesterol levels. The very latest research suggests that fish oil may tend to increase blood cholesterol levels.

For more information, contact the American Heart Association or your local or state health departments.

Developed by the Minnesota Department of Health, July 1990.

GOOD AND BAD CHOLESTEROL: WHAT'S THE DIFFERENCE?

For further information, measurement and evaluation of your total, HDL-cholesterol, LDL-cholesterol, and triglycerides, see your doctor.

What is cholesterol? Cholesterol is a waxy substance that is necessary for the body's normal functions. The amount of cholesterol in your blood is affected partly by your genetics and partly by what you eat.

Blood cholesterol is different from dietary cholesterol. The number you receive at a cholesterol screening is a measure of your total blood cholesterol. Dietary cholesterol is found in the foods you eat. It is only found in animal products like meats, cheeses and eggs.

Total Blood Cholesterol: Total blood cholesterol is all of the cholesterol in your blood. This includes both HDL-cholesterol and LDL-cholesterol. It is measured by taking a blood sample from the finger or arm. Total blood cholesterol can be measured any time of the day, with or without fasting. The food you have recently eaten does not change your total blood cholesterol. Total blood cholesterol should be measured at least once every 5 years in all adults 20 years of age and over. A blood cholesterol level of 200 mg/dl or greater may increase your chance of having a heart attack or stroke.

TOTAL CHOLESTEROL LEVELS

<u>Desirable</u>	<u>Borderline-high</u>	<u>High</u>
less than 200 mg/dl	200-239 mg/dl	240 mg/dl and above

A total blood cholesterol measurement does not provide enough information for a diagnosis. There are three other measurements used by a doctor to diagnose high blood cholesterol. They are LDL-cholesterol, HDL-cholesterol and triglycerides. Fasting is required for these measurements.

LDL-Cholesterol: Your body puts cholesterol into packages to move it through the blood. The packages are called lipoproteins. One of these lipoproteins is low-density lipoprotein (LDL). LDL's move cholesterol into the arteries. If there is too much cholesterol, it may stick to the artery walls. This may clog the arteries and increase your risk for heart disease. Because LDL's move cholesterol into the arteries, LDL's are called "bad" cholesterol. LDL levels can be lowered by eating a diet lower in fat.

continued on back

LDL-CHOLESTEROL LEVELS

<u>Desirable</u>	<u>Borderline-high</u>	<u>High</u>
less than 130 mg/dl	130-159 mg/dl	160 mg/dl and above

HDL-Cholesterol: Another lipoprotein package is high-density lipoprotein (HDL). HDL's remove cholesterol from the arteries. Because they remove cholesterol, HDL's are called the "good" cholesterol. Higher HDL levels are desirable and may reduce your risk for heart disease. You can increase your HDL level by not smoking, doing aerobic exercise and losing weight if you are overweight.

HDL-CHOLESTEROL LEVELS

<u>Desirable</u>
above 35 mg/dl

Triglycerides: Triglycerides are the form in which fats are carried through the blood. Triglycerides provide energy to the body and they make up most of the body's fat tissue. You must fast for 12 hours before having your triglyceride level measured because it is affected by what you have recently eaten. Triglyceride levels may be helpful in identifying people at risk for heart disease.

TRIGLYCERIDE LEVELS

<u>Desirable</u>	<u>Borderline-high</u>	<u>High</u>
less than 250 mg/dl	250-500 mg/dl	500 mg/dl and above

How To Determine LDL-cholesterol: Your LDL-cholesterol level is calculated from your total cholesterol, HDL-cholesterol and triglyceride levels. These tests are taken after you have fasted for 12 hours. The formula used to calculate your LDL-cholesterol is:

$$\text{LDL Cholesterol} = \text{Total Cholesterol} - \text{HDL Cholesterol} - \frac{\text{Triglycerides}}{5}$$

Recommended Materials and Resources

The annotated bibliography contained on the following pages was developed in 1989 by the Intercollegiate Nutrition Consortium of the University of Minnesota. It lists the intended audience as well as short descriptions for each piece. All of the items listed are consistent with the NCEP guidelines.

GENERAL

-1-

Title: Eating For Life

Producer and Source: National Cholesterol Education Program
Building 31, Room 4A21, C-200
Bethesda, MD 20892
(301) 951-3260 *(For fewer than 10 copies)*
OR Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

Category: 24 p. pamphlet (Publication No. 88-3000)

Target Audience: Adult public with high school education

Summary: The original is in full color. Focus on general diet improvements to reduce both cancer and heart disease risk.

Title: So You Have High Blood Cholesterol

Producer and Source: National Cholesterol Education Program
National Heart, Lung, and Blood Institute
C-200
Bethesda, Maryland 20892

Category: 26 p. booklet (Publication No. 87-2922)

Target Audience: Motivated public with 8th grade education or higher

Summary: Colorful graphs and drawings make this an attractive resource. Thorough description of relationship of blood cholesterol and heart disease. Glossary of blood cholesterol related terms is included, also a brief section of dietary advice.

Title: Questions and Answers About Cholesterol and Heart Disease

Producer and Source: Egg Nutrition Center
2501 M St., NW, Suite 410
Washington, D.C. 20037
202-833-8850

Category: 17 p. pamphlet

Target Audience: General public; Clinic use, could use at screenings

Summary: This pamphlet focuses on risk factors for heart disease, factors affecting the type and amount of cholesterol in the blood, and strategies to lower dietary and blood cholesterol. There is no mention of specific limitations on the number of egg yolks to eat.

Title: The Healthy Handbook for Women

Producer and Source: U.S. Department of Health and Human Services
National Cholesterol Education Program, NHLIB
C-200 Information Center
Bethesda, MD 20892
Publication No. 87-2720

Category: 32 p. brochure

Target Audience: College educated women at risk for heart disease; Highly motivated clients; Health professionals

Summary: This pamphlet provides a number of statistics and an in-depth look at risk factors for heart disease in women, as well as strategies for reducing these risk factors. Good reference.

*Currently unavailable, being reprinted.

Title: Eating to Lower Your High Blood Cholesterol

Producer and Source: National Cholesterol Education Program
National Heart, Lung, and Blood Institute
C-200 Information Center
Bethesda, Maryland 20892

Category: 50 p. booklet

Target Audience: Someone who is serious and highly motivated about blood cholesterol.

Summary: Accurate, understandable material, but lengthy. Includes a glossary and sections on changing eating patterns to implement a blood cholesterol lowering diet. Clear explanations of blood vs dietary cholesterol.

Title: FDA Consumer Cholesterol Quiz
February, 1989

Producer and Source: Reprint from FDA Consumer, February 1989

Category: 1 p., 2 sided reprint/fact sheet

Target Audience: Adults

Summary: Ten commonly asked questions about blood and dietary cholesterol with concise, clear answers. Would be useful at a screening while people are waiting or to assess knowledge prior to a workshop on blood cholesterol management.

Title: Cholesterol and Your Heart (1988 only)

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: 11 p. pamphlet

Target Audience: General public; Middle class

Summary: Introduces topic and explains rationale and background for diet changes. Provides dietary cholesterol and fat content chart for 24 foods.

Title: Cholesterol: What You Eat Makes A Difference

Producer and Source: Park Nicollet Medical Center
5000 West 39th Street
Minneapolis, MN 55416
(612) 927-3924

Category: 1 p. bifold

Target Audience: General public

Summary: Useful when blood cholesterol is tested: explains what the number mean, the relationship of diet and other risk factors to heart disease and the importance of dietary fat modification. Use to raise awareness.

Title: Diet, Blood Cholesterol and Cardiovascular Disease

Producer and Source: Minnesota Extension Service
Distribution Center
3 Coffey Hall
1420 Eckles
St. Paul, MN 55108
OR
Contact your local Extension Service

Category: 1 p. 2-sided fact sheet

Target Audience: General public

Summary: Describes cardiovascular disease process, contributing risk factors and the relationship of diet to atherosclerosis development. Includes a paragraph for older adults considering dietary changes in order to lower blood cholesterol. Food advice is very general.

*Out of stock 6/1989. Contact your local extension office for copies.

GUIDELINES

-1-

Title: Heart Healthy Eating

Producer and Source: Abbott Northwestern Hospital
Department of Nutrition Services
800 East 28th Street at Chicago Avenue
Minneapolis, MN 55407

Category: 38 p. spiral bound booklet 8 1/2" x 11"

Target Audience: Registered Dietitians to use with patients

Summary: This spiral bound booklet would be best used in a series of sessions with a nutrition professional. Included are sections on terms associated with heart disease, making food choices, reading labels, weight control, sodium restrictions, seasonings, food preparation, and dining out.

Title: Eat Well. But Wisely

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: 1 p. pamphlet

Target Audience: General adult public

Summary: Very brief, introductory suggestions on reducing the risk of heart disease and choosing foods.

Title: Dining Out. A Guide to Restaurant Dining

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: 15 p. pamphlet

Target Audience: General public

Summary: A guide to restaurant dining lists low fat and low sodium options to consider when eating out. Includes suggestions for specific meals from American cuisines as well as information on what to eat at various ethnic restaurants.

Title: Dietary Guidelines for Healthy American Adults

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: 4 page leaflet

Target Audience: Health professionals

Summary: "Dietary Guidelines for Healthy American Adults, A Statement for Physicians and Health Professionals by the Nutrition Committee, American Heart Association" is the current American Heart Association position statement also published in Circulation Vol. 77, No. 3, March '88.

Title: Food for a Healthy Heart. A Nutrition Workbook

Producer and Source: Dairy Council of California
MN SOURCE: Dairy Council of Minnesota
2015 Rice Street
St. Paul, MN 55113
(612) 488-0261

Category: 7 page workbook

Target Audience: Adults of all ages

Summary: Includes a dietary assessment tool which also serves as a guide for low fat choices from each of the basic food groups. The emphasis is on achieving a balanced diet while eating less fat. Description of relationship of diet and heart disease includes a set of questions and answers related to blood cholesterol management.

FOOD FAT FACTS

-1-

Title: Tofu . . . It's "Soy" Good

Producer and Source: American Soybean Association
777 Craig Road
St. Louis, MO 63141

Category: 1 p. four fold pamphlet

Target Audience: General public; Young adult and up

Summary: A good reference for someone interested in learning about tofu. Instructions address substituting tofu for meats, eggs, cheeses, and other protein sources.

Title: You Can Avoid Saturated Fat

Producer and Source: American Soybean Association
P.O. Box 27300
777 Craig Road
St. Louis, MO 63141

Category: 1 p. folded pamphlet

Target Audience: Motivated general public; Young adult and up; those interested in fatty acid breakdown of oils and fats

Summary: The American Soybean Association has provided information for label reading by listing selected products made with unsaturated vegetable oils as opposed to tropical fats (palm or coconut oil). Specific brand names are used; promotes consumer awareness that ingredients change. Several paragraphs discuss product formulation.

Title: A Change of Plate
How to Reduce Fat and Calories When Choosing and Using Meat

Producer: Education Department
National Livestock and Meat Board
444 North Michigan Avenue
Chicago, IL 60611
(312) 467-5520

Source: For a kit, write on your agency letterhead; include how and with whom kit will be used: Dianne McCroskey Phillips, CHE
Minnesota Beef Council
2950 Metro Drive, Suite 211
Minneapolis, MN 55425

Category: Teaching kit with food models, posters, photocopy masters, and a leader's guide

Target Audience: Health educators, dietitians

Summary: Kit (12 3/4" X 18" X 3") not in catalogue; ideally used only after leader training session. Many extension offices already own one; check with your county agent. Food models and photographs clearly depict portion sizes, whole kit is well-planned and allows for flexibility in teaching.

Title: Fat and Cholesterol

Producer and Source: The Dannon Information Center
P.O. Box 593
White Plains, NY 10602-0593

Category: Pamphlet

Target Audience: General public; Middle-aged; High school education

Summary: Provides fairly technical yet clear information on dietary alterations needed to eat less total fat. Some emphasis on yogurt use.

Title: Amount of Fat and Cholesterol in Meat

Producer and Source: Richard J. Epley, MN Extension Service
Distribution Center
3 Coffey Hall
1420 Eckles
St. Paul, MN 55108

Category: 4 p. pamphlet

Target Audience: Food Scientists; Chefs; Dietitians

Summary: Explains fat and dietary cholesterol. Variations in meat and meat products. How to select cuts of meat. Well referenced.

Title: Fat Chance

Producer and Source: Minneapolis Health Department
Health Education Department
250 So. 4th Street
Minneapolis, MN 55415

Category: 2-page fact sheet

Target Audience: Clinic use; Lower to middle income

Summary: This is a very basic fact sheet on how to reduce dietary fat content, using a substitution list. Very general, no specifics regarding portion sizes are given. May be used by an MD/RD to support oral instructions.

Title: Jack Sprat - A 1988 Update

Producer and Source: Minneapolis Health Department
Health Education Department
250 So. 4th Street
Minneapolis, MN 55415

Category: 2-Page flyer

Target Audience: Clinic use or general public to provide information on lean cuts.

Summary: A listing of leaner cuts of meat and fish by category (lamb, beef, veal, fish). Portion sizes not included.

Title: Beef Measures Up to a Heart Healthy Diet (American Heart Association)

Producer and Source: Wyoming Beef Council
P.O. Box 1243
Cheyenne, WY 82003
(307) 777-7396

Category: Tri-fold pamphlet

Target Audience: General public; Age 30 year olds or above; Middle class

Summary: Beautiful photographs product items for recipes are given. Content includes lean meat selection, portion size descriptions and low calorie food preparation techniques plus a paragraph on the benefits of low-fat healthful eating.

Title: What Should I Put In My Coffee?

Producer and Source: American Heart Association
Presto Food Products, Inc.
P.O. Box 584
City of Industry, CA 91747-0584

Category: 2-fold, 1 page pamphlet

Target Audience: General public; Coffee drinkers who use a "whitener"

Summary: A simple well-written handout discussing saturated fat (coconut and palm oils) found in coffee creamers and other foods.

Title: A Compendium On Fats

Producer and Source: Department of Health and Human Services
Food and Drug Administration
Public Health Service
5600 Fishers Lane
Rockville, MD 20857
HHS Publication No. (FDA) 83-2171 *No longer available as a reprint

Category: 3 p. reprint from March 83 FDA Consumer (public domain)

Target Audience: Educated public age 30 or greater

Summary: Update on basic "fat chemistry," thus probably only appropriate for well educated clients and consumers. No specific food guidelines are given.

Title: Exploring Meat and Health

Producer and Source: National Live Stock & Meat Board
444 N. Michigan Avenue
Chicago, IL 60611

Category: 18 p. pamphlet

Target Audience: Middle age; Middle class; at least a high school education; Professionals

Summary: Detailed information on incorporation of lean beef, pork, veal, and lamb cuts into a dietary regimen. While extensive graphs and figures are used to help illustrate ideas, some of the figures could be confusing.

Title: Dietary Fats and Health

Producer and Source: University of Minnesota Extension Service
Distribution Center, University of Minnesota
3 Coffey Hall, 1420 Eckles Avenue
St. Paul, MN 55108

Category: 4 p. fact sheet

Target Audience: Health care professionals

Summary: Technical background information includes charts for fatty acid saturation comparison, dietary cholesterol sources and label examples. Describes various types of lipids. Written prior to the NCEP Adult Treatment report, it refers to research suggesting that reducing fat intake to 35% of caloric intake would have significant health benefits.

Title: Cooking with Less Fat

Producer and Source: University of Minnesota Extension Service
Distribution Center
3 Coffey Hall
1420 Eckles Avenue
St. Paul, MN 55108

Category: 4 p. pamphlet

Target Audience: General public

Summary: Detailed instructions to help persons lower their dietary fat intake; could use with a patient or in an adult education classroom setting. Tips still current, despite the 1982 date.

Title: Fast Fat Facts

Producer and Source: Egg Nutrition Center
2501 "M" Street N.W.
Washington, D.C. 20037
(202) 833-8850

Category: 2 sheets of xerox masters. Allows you to make your own brochure.

Target Audience: General public

Summary: For teaching dietary fat reduction techniques. Clear graphics and easy to read format are used to present this brief and very broad overview. Cooking tips and a recipe substitutions list help people to make changes gradually.

Title: Recipes for Low-Fat, Low-Cholesterol Meals

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: 47 p. booklet

Target Audience: People with low incomes may not have access to ingredients used.

Summary: Substitutions for the high fat basics and recipes for someone who wants to get started on low fat/low saturated fat cooking.

Title: Fish Oil Facts and Fallacies

Producer and Source: Minneapolis Health Department
250 South 4th Street
Minneapolis, MN 55404
(612) 348-2304

Category: 2-page fact sheet

Target Audience: General public

Summary: Brief fact sheet to explain simply the nutritive qualities of fish oils and their effects on human health. Compares eating capsules vs. seafoods.

REPORTS

-1-

Title: Surgeon General's Report on Nutrition and Health (Summary and Recommendations)

Producer and Source: U.S. Department of Health and Human Services
Superintendent of Documents
Government Printing Office
Washington, D.C. 20402
Publication No. 88-50211
(202) 783-3238 for current price

Category: 78 p. pamphlet*

Target Audience: Health care professionals; Policymakers; Public

Summary: Surgeon General's report on nutrition and health (summary and recommendations). There are no food specific recommendations; however, information in this landmark document is essential for the RD, highly desirable for the MD and other health professionals and policy makers.

*Currently out of stock, not in packet.

Title: Facts About . . . Blood Cholesterol

Producer and Source: U.S. Department of Health and Human Services
National Institutes of Health
Government Printing Office
Washington, D.C. 20401
Publication No. 88-2696

Category: Pamphlet

Target Audience: High school education

Summary: Targeted at updating public health professionals, practicing nutritionists and other health educators on blood cholesterol management issues; overall an excellent source of information for almost anyone deeply interested in this topic. Contains recommendations for dietary adjustments.

Title: Lowering Blood Cholesterol to Prevent Heart Disease

Producer and Source: U.S. Department of Health and Human Services
National Institutes of Health
Office of Medical Applications of Research
Building 1, Room 216
Bethesda, MD 20205

Category: 11 p. Consensus Statement reprint

Target Audience: Health professionals; Public policy makers

Summary: This benchmark for policy development describes the state of affairs leading to the formation of NCEP. Provides evidence used and gives a rationale for action. Members of the Consensus Development Panel are listed. Precedes NCEP's criteria.

Title: Report of the National Cholesterol Education Program
Expert Panel on Detection, Evaluation, and Treatment of
High Blood Cholesterol in Adults

Producer and Source: National Heart, Lung, and Blood Institute
Superintendent of Documents
Government Printing Office
Washington, D.C. 20402
Publication No. 88-2925
Also published in: Archives of Internal Medicine, Vol 148, Jan. 88, pp 36-69

Category: 33 p. reprint

Target Audience: Health professionals

Summary: This report is the basis for the National Cholesterol Education Program's guidelines; written for all health professionals who work in this field. Includes specific food recommendations. An 8 page summary is also available.

Title: Effect of Dietary Cholesterol on Serum Cholesterol: An Interpretative Review

Producer and Source: Egg Nutrition Center
2501 "M" Street N.W.
Washington, D.C. 20037
(202) 833-8850

Category: 6 p. fold out

Target Audience: Health care professionals

Summary: A good piece for health professionals interested in the science of cholesterol metabolism. Demonstrates the complexity of this issue. Specifically illustrates questions concerning cholesterol research. Minimal bias regarding eggs.

CHILDREN

-1-

- Title:** Diet in the Healthy Child
- Producer and Source:** American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231
- Category:** 5 p. pamphlet
- Target Audience:** Health professionals
- Summary:** Includes current Heart Association guidelines for children over age two. Tables depicting normal plasma lipid and lipoprotein values in children. This pamphlet does suggest 100 mg chol/1000 calories which is no longer used for any other dietary guidelines. Watch for changes as the National Cholesterol Education Program develops heart health guidelines for children.
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- Title:** "Indications for Cholesterol Testing in Children"
- Producer and Source:** American Academy of Pediatrics, Committee on Nutrition
- Category:** 2 p. reprint article, Pediatrics, Vol. 83, No. 1, January 1989
- Target Audience:** Health professionals
- Summary:** Position statement presenting issues and blood cholesterol of screening recommendations for children. Suggestions for including dietary consultation. Watch for changes as the National Cholesterol Education Program develops heart health guidelines for children.
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- Title:** "Prudent Life-Style for Children: Dietary Fat and Cholesterol"
- Producer and Source:** American Academy of Pediatrics Committee on Nutrition
- Category:** 5 p. reprint article, Pediatrics, Vol. 78, No. 3, Sept. 1986
- Target Audience:** Health professionals
- Summary:** Discussion of background for the seven recommendations made at the end of the article. Fat guideline says "the optimal total fat intake cannot be determined, but 30-40% of calories seems sensible for adequate growth and development." Watch for changes as the National Cholesterol Education Program develops heart health guidelines for children.

Title: The Diagnosis and Treatment of Primary Hyperlipidemia in Childhood

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: 8 p. pamphlet

Target Audience: Health professionals; Physicians

Summary: Pamphlet is subtitled "A Joint Statement for Physicians by the Committee on Atherosclerosis and Hypertension in Childhood of the Council on Cardiovascular Disease in the Young and the Nutrition Committee, American Heart Association."

SCREENING

-1-

Title: Current Status of Blood Cholesterol Management in Clinical Laboratories in the United States. Jan 1.

Producer and Source: U. S. Department of Health and Human Services
Public Health Service
National Institutes of Health
U.S. Government Printing Office
Publication No. 88-2928 (January 1988)
(202) 783-3238

Category: 27 p. booklet

Target Audience: Health professionals, especially those who purchase testing systems

Summary: Technical, yet clear, description of why accurate cholesterol measurements are necessary. Begins with overview and recommendations, includes current state of reliability of blood cholesterol management and the resources available. Cites Committee for Laboratory Standards (771 E. Lancaster Ave., Villanova, PA 19085) as source for the National Reference System for Cholesterol. Lists factors contributing to acceptable analytic performance.

Title: Public Screening for Measuring Blood Cholesterol

Producer and Source: National Heart, Lung, and Blood Institute
Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

Category: Pamphlet

Target Audience: Health professionals

Summary: Issues to consider before initiating a mass screening program such as: enlisting physician cooperation prior to screenings, reporting measurements and other information to screeners, deciding who should be involved at a screening, and an update on new technologies. Introduction provides a brief history of the National Cholesterol Education Program's development.

COUNSELING

-1-

Title: Dietary Treatment of Hypercholesterolemia. A Manual for Patients

Producer and Source: American Heart Association
Minnesota Affiliate, Inc.
4701 West 77th Street
Minneapolis, MN 55435
(612) 835-3300

Category: 110 p. booklet

Target Audience: Clinic use for very motivated patients only

Summary: This book is best suited to clinic use. Detailed information on Step One and Two Diets, sample menus, and a lengthy listing of fat content of foods is included. Accompanying manual for consultant use is available.

Title: Food Choices to Lower Blood Cholesterol - The First Step

Producer and Source: Park Nicollet Medical Foundation
Health Education Department
5000 West 39th Street
Minneapolis, MN 55416
(612) 927-3454

Category: Tri-fold pamphlet

Target Audience: Clinic use. Sent to people prior to their attendance at cholesterol education class.

Summary: Foods are broken down into specific food groups with food choices appropriate for a low fat diet listed in each category. A sample menu is provided. Includes list of other programs available through Park Nicollet Health Education.

Title: Heart to Heart

Producer and Source: U.S. Department of Health and Human Services
Public Health Service
National Institutes of Health
Publication No. 85-1528

Category: 121 p. book

Target Audience: Nutrition counselors/professionals only

Summary: A lengthy manual on nutrition counseling for the reduction of cardiovascular disease risk factors. A number of basic nutrition counseling skills are addressed.

Title: Fat and Cholesterol Comparison Charts

Producer and Source: Nutrition Graphics
P.O. Box 1527
Corvallis, OR 97339

Category: Visual aids (charts)

Target Audience: Either individual or group clinic use

Summary: This series of visual aids would be a good tool for group use. Color bar graphs differentiate between high, medium, and low fat foods. Also shown is a fat content comparison of different menus.

*Not in catalogue

Title: Nutrition Counseling for Cardiovascular Health

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: 12 p. pamphlet

Target Audience: General public; Adults

Summary: Information on how to select a nutrition counselor, and what to expect from nutrition counseling. Does not specifically address heart disease.

Title: Counseling Adolescents for Dietary Change

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: Booklet

Target Audience: Professionals

Summary: Good tips for counseling any adolescent audience. Addresses special concerns in working with teens including independence and dependence, peer group, establishing rapport, inviting friends and family to sessions. Describes strategies and procedures of effective counseling.

OTHER RISK FACTORS

-1-

Title: Coronary Risk Factor Modifications in Children: Smoking

Producer and Source: American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231

Category: Brochure

Target Audience: Physicians; Nurses; Other health care workers

Summary: Use to inform school nurses and public health agencies regarding prevalence of smoking among teenagers and provide recommendations to encourage cessation. Paper states: ". . . the most successful smoking prevention programs have been conducted in schools. . . "

PROGRAM EVALUATION

Program evaluation may be important to justifying future public cholesterol education and screening programs. Several evaluation exercises are listed below.

- Survey participants for positive and negative feedback on their screening experience.
- Conduct a time study on amount of staff time involved in providing a cholesterol education and screening program.
- Do a cost analysis of expenses versus revenue for the cholesterol education and screening program.
- Determine the percentage of your target population screened = $\frac{\text{\# of participants screened}}{\text{\# of persons in target group}} \times 100$
- Monitor and log requests for additional screening and education programs.
- Survey participants to determine if they have taken action based on the recommendations you provided them with for seeking medical care and making lifestyle changes (diet changes, risk factor reduction).
- Survey the area Medical Society for feedback.
- Survey the area physicians for feedback.